

# THE UNITED STATES OF AMERICA

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UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

June 03, 2004

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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

APPLICATION NUMBER: 60/463,586

FILING DATE: April 17, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/11973

REC'D 07 JUN 2004

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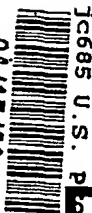
*M. Tarver*

M. TARVER  
Certifying Officer

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04/17/03



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# PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. **EU 982359106 US**

PTO/SB/16 (10-01)  
11033 S. PTO  
6U/463586

INVENTOR(S)					
Given Name (first and middle (if any))		Family Name or Surname		Residence (City and either State or Foreign Country)	
Brock Wayne		Watson		Carrollton, Texas	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (500 characters max)					
EXTENDER TOOL					
Direct all correspondence to: CORRESPONDENCE ADDRESS.					
<input type="checkbox"/> Customer Number		000027684		Place Customer Number Bar Code Label here	
OR		Type Customer Number here			
<input checked="" type="checkbox"/> Firm or Individual Name		Todd Mattingly			
Address		1000 Louisiana Street			
Address		Suite 4300			
City		Houston		State	TX
Country		USA		ZIP	77002-5012
		Telephone	713-547-2301	Fax	713-236-5585
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification		Number of Pages		13	
<input type="checkbox"/> Drawing(s)		Number of Sheets			
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76				<input type="checkbox"/> CD(s), Number	
				<input checked="" type="checkbox"/> Other (specify)	
				Return Receipt Postcard	
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$)	
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees					
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:		08-1394		\$160.00	
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE Todd Mattingly  
TYPED or PRINTED NAME Todd Mattingly  
TELEPHONE 713-547-2301

Date 04/17/2003

REGISTRATION NO. 40,298  
(if appropriate)  
Docket Number: 25791.277

## USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

982359106 041703

EXPRESS MAIL NO. EU 982359106 US

DATE OF DEPOSIT: April 17, 2003

The Provisional Application for Patent Cover Sheet and the following thirteen (13) pages are being deposited with the U.S. Postal Service Express Mail Post Office to Addressee Service under 37 CFR §1.10 on the date indicated above and is addressed to: BOX PROVISIONAL PATENT APPLICATION, Commissioner for Patents, Washington, D.C. 20231

Vikki M. Meriwether

Name of person mailing paper and fee

Vikki M. Meriwether

Signature of person mailing paper and fee

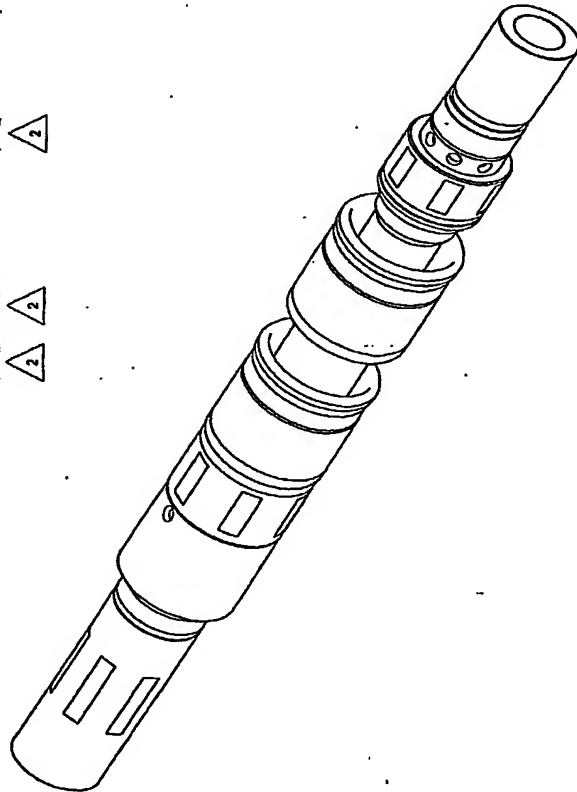
Docket No. 25791.277  
EU 982359106 US

## EXTENDER TOOL

INVENTOR: Brock Wayne Watson

The extender tool operates essentially the same as a single stage hydraulic cylinder. When pressure is applied to the inside, force is applied to the piston or plunger that will cause the lower end of the tool to move away from the upper end of the tool. This will be used to push the packer, the 10.4 OD cone, and the 11.100 OD cone outside the casing just prior to initial expansion of the casing. We had these tools inside the casing so they would be protected while the casing was being run down-hole but they need to be outside the casing to begin the expansion process. The upper end of the tool has a device that will form a positive lock to an adapter that is part of the casing string. We use this casing lock to carry the weight of the casing as we move downhole. When the actuator gets to the bottom of its stroke, it will shear pins and pull the prop out from under the dogs so that the casing will be released from the casing lock. The actuator remains in the tool string but it does not contribute to the expansion process after this point in the process.

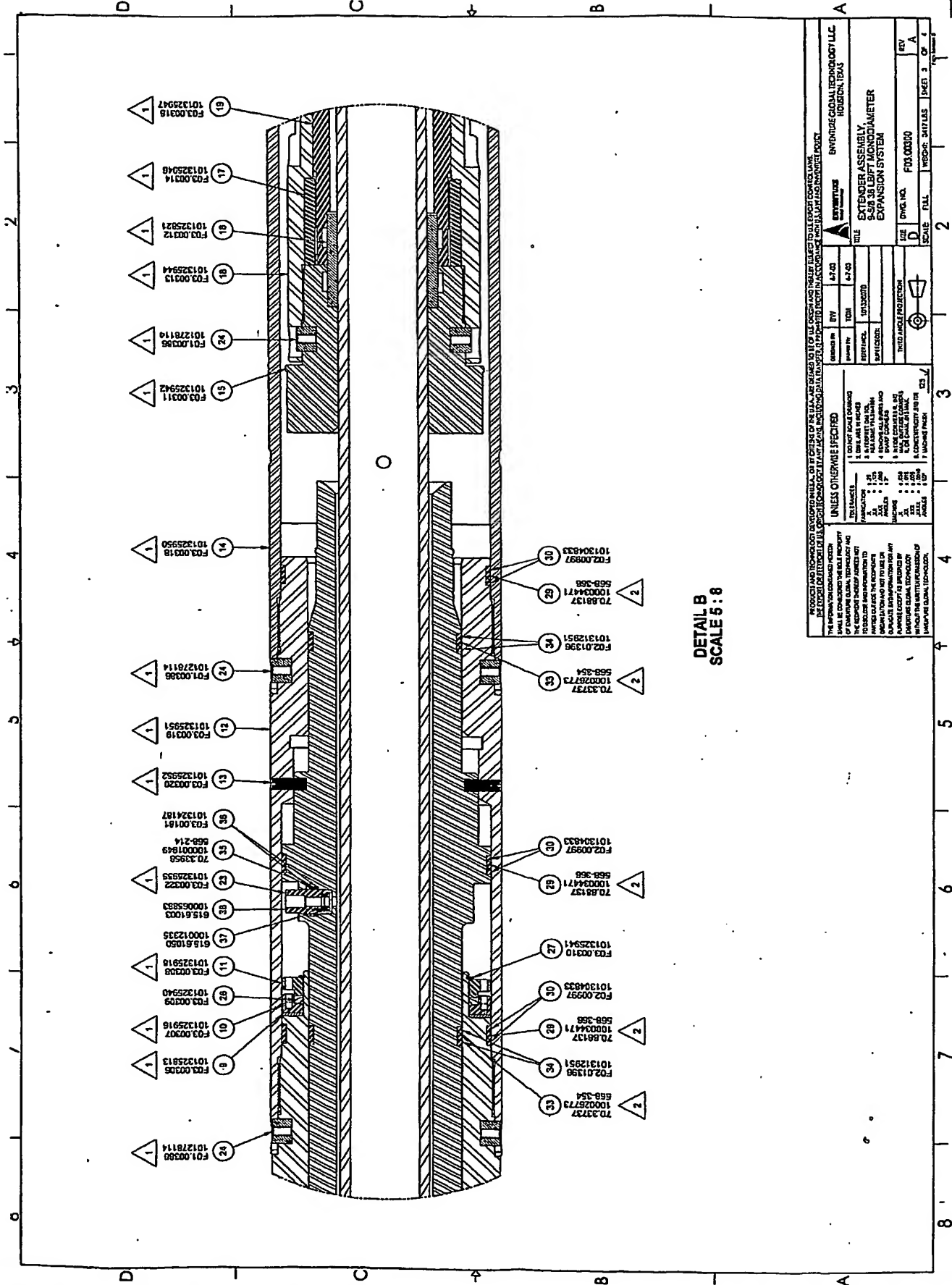
The cup sub assembly is a simple device that seals against the casing. The cups are oriented such that they will seal pressure from below. After the packer has been set in the expansion process, it is possible to expand additional casing using the hydraulic actuator. However, it is more desirable to use a more conventional expansion process because it is faster. The conventional process consists of simply pumping fluid below the cone thus causing it to move upwards. The conventional cone is solid so it forms a necessary seal against the casing, however, since the expandable cone does not form a seal, a packer cup must be used to form the seal. The packer cup mandrel forms this seal.



<p>INVENTOR AND TECHNOLOGY DEVELOPER IN U.S.A. OR BY CITING OF THE U.S.A. ARE DEEMED TO BE OF U.S.A. ORIGIN AND MUST UNDERTAKE TO OBTAIN CONTROLLING INTEREST IN THE INVENTION AND TO ASSURE COMPLETION OF THE INVENTION AND TO ASSURE COMPLETION OF THE INVENTION AND TO ASSURE COMPLETION OF THE INVENTION</p>	<p>UNLESS OTHERWISE SPECIFIED</p>	<p>TOOL NUMBER</p> <p>1. TOOL NUMBER</p> <p>2. TOOL NUMBER</p> <p>3. TOOL NUMBER</p> <p>4. TOOL NUMBER</p> <p>5. TOOL NUMBER</p> <p>6. TOOL NUMBER</p> <p>7. TOOL NUMBER</p> <p>8. TOOL NUMBER</p> <p>9. TOOL NUMBER</p> <p>10. TOOL NUMBER</p> <p>11. TOOL NUMBER</p> <p>12. TOOL NUMBER</p> <p>13. TOOL NUMBER</p> <p>14. TOOL NUMBER</p> <p>15. TOOL NUMBER</p> <p>16. TOOL NUMBER</p> <p>17. TOOL NUMBER</p> <p>18. TOOL NUMBER</p> <p>19. TOOL NUMBER</p> <p>20. TOOL NUMBER</p> <p>21. TOOL NUMBER</p> <p>22. TOOL NUMBER</p> <p>23. TOOL NUMBER</p> <p>24. TOOL NUMBER</p> <p>25. TOOL NUMBER</p> <p>26. TOOL NUMBER</p> <p>27. TOOL NUMBER</p> <p>28. TOOL NUMBER</p> <p>29. TOOL NUMBER</p> <p>30. TOOL NUMBER</p> <p>31. TOOL NUMBER</p> <p>32. TOOL NUMBER</p> <p>33. TOOL NUMBER</p> <p>34. TOOL NUMBER</p> <p>35. TOOL NUMBER</p> <p>36. TOOL NUMBER</p> <p>37. TOOL NUMBER</p> <p>38. TOOL NUMBER</p> <p>39. TOOL NUMBER</p> <p>40. TOOL NUMBER</p> <p>41. TOOL NUMBER</p> <p>42. TOOL NUMBER</p> <p>43. TOOL NUMBER</p> <p>44. TOOL NUMBER</p> <p>45. TOOL NUMBER</p> <p>46. TOOL NUMBER</p> <p>47. TOOL NUMBER</p> <p>48. TOOL NUMBER</p> <p>49. TOOL NUMBER</p> <p>50. TOOL NUMBER</p> <p>51. TOOL NUMBER</p> <p>52. TOOL NUMBER</p> <p>53. TOOL NUMBER</p> <p>54. TOOL NUMBER</p> <p>55. TOOL NUMBER</p> <p>56. TOOL NUMBER</p> <p>57. TOOL NUMBER</p> <p>58. TOOL NUMBER</p> <p>59. TOOL NUMBER</p> <p>60. TOOL NUMBER</p> <p>61. TOOL NUMBER</p> <p>62. TOOL NUMBER</p> <p>63. TOOL NUMBER</p> <p>64. TOOL NUMBER</p> <p>65. TOOL NUMBER</p> <p>66. TOOL NUMBER</p> <p>67. TOOL NUMBER</p> <p>68. TOOL NUMBER</p> <p>69. TOOL NUMBER</p> <p>70. TOOL NUMBER</p> <p>71. TOOL NUMBER</p> <p>72. TOOL NUMBER</p> <p>73. TOOL NUMBER</p> <p>74. TOOL NUMBER</p> <p>75. TOOL NUMBER</p> <p>76. TOOL NUMBER</p> <p>77. TOOL NUMBER</p> <p>78. TOOL NUMBER</p> <p>79. TOOL NUMBER</p> <p>80. TOOL NUMBER</p> <p>81. TOOL NUMBER</p> <p>82. TOOL NUMBER</p> <p>83. TOOL NUMBER</p> <p>84. TOOL NUMBER</p> <p>85. TOOL NUMBER</p> <p>86. TOOL NUMBER</p> <p>87. TOOL NUMBER</p> <p>88. TOOL NUMBER</p> <p>89. TOOL NUMBER</p> <p>90. TOOL NUMBER</p> <p>91. TOOL NUMBER</p> <p>92. TOOL NUMBER</p> <p>93. TOOL NUMBER</p> <p>94. TOOL NUMBER</p> <p>95. TOOL NUMBER</p> <p>96. TOOL NUMBER</p> <p>97. TOOL NUMBER</p> <p>98. TOOL NUMBER</p> <p>99. TOOL NUMBER</p> <p>100. TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>	<p>TOOL NUMBER</p>
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DETAIL B  
SCALE 5:8

PROJECT AND COMPANY INFORMATION PROJECT: 101325947 COMPANY: BYRONIDE CIGAL TECHNOLOGY LLC REGION: USA	
DRAWING NO.: F03.00300 SCALE: FULL SHEET: 3 OF 4	TITLE: EXTENDER ASSEMBLY 9-30 30 LBFT MONODIAMETER EXPANSION SYSTEM
DESIGNED BY: [blank] CHECKED BY: [blank] DATE: 07-03	REVISIONS: [blank]
UNLESS OTHERWISE SPECIFIED: 1. DIMENSIONS ARE IN INCHES 2. DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE 3. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 4. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 5. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 6. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 7. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 8. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 9. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE 10. DIMENSIONS ARE TO CENTERLINE UNLESS NOTED OTHERWISE	





# Design

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 BY ENVENTURE GLOBAL TECHNOLOGY WITHOUT THE WRITTEN PERMISSION OF EGT.

## Enventure Global Technology Product Information Report

This report reflects Product Structure for the named Part as it existed in the PDM  
 system on the date and time this Report was created.

Type= Part

Name= 101326070

Revision= A

Description= EXTENDER ASSEMBLY, 9-5/8 36  
 LB/FT MONODIAMETER  
 EXPANSION SYSTEM

Reference Number= F03.00300

Lab/Office= EEC=Enventure Expandable Casing

APPROVED BY:

TITLE/ ROLE	PERSON	DATE	ACTION
Design Complete			
Procurement or Mfg Approval			
Technology Design approval			

### Defining Objects:

Find#	Type	Name	Rev	Description
	Note	F03.00300	A	EXTENDER ASSEMBLY, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM
	Calculations	F03.00300	A	EXTENDER ASSEMBLY, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM
	Assembly Model	F03.00300	A	EXTENDER ASSEMBLY, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM
0041	Specification	70.72	M	SPECIFICATION - TRACEABILITY REQUIREMENTS - SERIAL NUMBER IDENTIFICATION
9999	Engr Drawing	F03.00300	A	EXTENDER ASSEMBLY, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM

### Reference Objects:

Find#	Type	Name	Rev	Reference#	Qty	Ref Type	Description
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# Design

## CURRENT CHANGE DESCRIPTIONS

Part 101326070 A  
NONE

Specification 70.72 M  
EDITORIAL CHANGES ONLY. SEE REVISION K.

Notes F03.00300 A

### NOTES:

1. TRACEABILITY REQUIRED PER SPEC 70.72 FOR LOC 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, AND 24.
2. LUBRICATE ALL THREADS AND O-RINGS BEFORE ASSEMBLY.

# **Component List:**

## **Design**

Find#	Type	Part/ Mat#	Reference#	Drawing#	Qty	Description	Dim A	Dim B	Dim C	TC
0001	Part	101326383	F03.00338	F03.00338	1.0	TOOL JOINT, UPPER, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0002	Part	101325734	F03.00301	F03.00301	1.0	LOCK, RING, INNER MANDREL, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0003	Part	101325740	F03.00302	F03.00302	2.0	NUT, PULL TUBE, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0004	Part	101325742	F03.00303	F03.00303	1.0	MANDREL, CASTING LOCK, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0005	Part	101304847	F02.00902	F02.00902	1.0	SLEEVE, RETAINER, DOG, 9-5/8 36 LB/FT TENSION ACTUATOR	-	-	-	S
0006	Part	101325776	F03.00304	F03.00304	1.0	TUBE, PULL, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0007	Part	101304883	F02.00903	F02.00903	1.0	HUMMER, CASING LOCK, 9-5/8 36 LB/FT TENSION ACTUATOR	-	-	-	S
0008	Part	101325801	F03.00305	F03.00305	1.0	CONNECTOR, CASING LOCK, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0009	Part	101325813	F03.00306	F03.00306	1.0	SEAL, FACE, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0010	Part	101325916	F03.00307	F03.00307	1.0	BACKUP, FACE SEAL, EXTENDER TOOL, 9-5/8 36 LB/FT	-	-	-	S

# Component List:

## Design

Find#	Type	Part/ Mat#	Reference#	Drawing#	Qty	Description	Dim A	Dim B	Dim C	TC
0011	Part	101325918	F03.00308	F03.00308	1.0	MONODIAMETER EXPANSION SYSTEM PLUNGER, FACE SEAL, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0012	Part	101325951	F03.00319	F03.00319	1.0	BODY RELEASE, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0013	Part	101325952	F03.00320	F03.00320	8.0	PIN, SHEAR, BRASS, 7/16-20UNF X 1.310, SLOTTED, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0014	Part	101325950	F03.00318	F03.00318	1.0	BARREL, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0015	Part	101325942	F03.00311	F03.00311	1.0	PISTON, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0016	Part	101325821	F03.00312	F03.00312	2.0	SLEEVE, SEALING, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0017	Part	101325946	F03.00314	F03.00314	2.0	BUSHING, THREADED, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0018	Part	101325944	F03.00313	F03.00313	1.0	LOCK NUT, UPPER, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S

# Component List:

## Design

Find#	Type	Part/ Mat'l#	Reference#	Drawing#	Qty	Description	Dim A	Dim B	Dim C	TC
0019	Part	101325947	F03.00315	F03.00315	1.0	TUBE, CONNECTING, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0020	Part	101325956	F03.00323	F03.00323	1.0	BUSHING, BARREL, LOWER, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0021	Part	101325948	F03.00316	F03.00316	1.0	LOCK NUT, LOWER, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0022	Part	101325949	F03.00317	F03.00317	1.0	CONNECTOR LOWER, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0023	Part	101325955	F03.00322	F03.00322	1.0	BUSHING, BURST DISK, EXTENDER TOOL, 9-5/8 36 LB/FT MONODIAMETER EXPANSION SYSTEM	-	-	-	S
0024	Part	101278114	F01.00386	F01.00386	14.0	PIN, TORQUE	-	-	-	S
0025	Part	101326708	F03.00341		1.0	SNAP RING	-	-	-	N
0026	Part	101325940	F03.00309		1.0	SPRING, WAVE, SMALLLEY SSR-0675, CARBON STEEL	-	-	-	N
0027	Part	101325941	F03.00310		1.0	RING, LOCK, SMALLLEY P/N WS600, CARBON STEEL	-	-	-	N
0028	Part	101326709	F03.00339		1.0	SEAL	-	-	-	N
0029	Part	100034471	70.88137	70.88137	4.0	O-RING, 90 DURO, 7 5/8 X 7-1/4 X 3/16, 568-366, SPEC 599.33001 SPEC, 70.72000	-	-	-	B

# Component List:

## Design

Find#	Type	Part/ Mat'l#	Reference#	Drawing#	Qty	Description	Dim A	Dim B	Dim C	TC
0030	Part	101304833	F02.00997		8.0	SEAL, BACK-UP, 7.688 OD X 7.330 ID X .265 WALL, 25 PERCENT GLASS FILLED TEFLON, SCARF CUT, SPEC 600.00700	-	-	-	N
0031	Part	100001974	70.33987	70.33987	2.0	O-RING, 90 DURO, 4 3/8 X 4 X 3/16 568-345, SPEC 599.33001 SPEC, 70.72000	-	-	-	B
0032	Part	101326121	F03.00324		4.0	SEAL, BACK-UP, 4.358 OD X 4.000 ID X .265W.F.TEFLON, SCARF, SPEC 600.00700	-	-	-	N
0033	Part	100026773	70.33737	70.33737	3.0	O-RING, 90 DURO, 5 1/2 X 5 1/8 X 3/16 568-354, SPEC 599.33001 SPEC, 70.72000 E10220 PARKER FLUID POWER 2- 354	-	-	-	B
0034	Part	101312951	F02.01396		6.0	SEAL, BACKUP, 5.258 OD X 4.900 ID X .265W, FILLED TEFLON, SCARF, SPEC	-	-	-	N
0035	Part	100001949	70.33958	70.33958	1.0	O-RING, 90 DURO, 1 1/4 X 1 X 1/8 568- 214, SPEC 599.33001 SPEC, 70.72000	-	-	-	B
0036	Part	101324187	F03.00181		2.0	SEAL, BACK-UP 1.230 OD X 1.000 ID X .131W.F.TEFLON, SCARF, SPEC 600.00700	-	-	-	N
0037	Part	100012335	615.61050	615.61050	1.0	DISC, RUPTURE, 5 K, 150 F, REFERENCE TABLE DRAWING 615.61600 E11439 OSECO W06-7601-403 E11619 B.S. & B SAFETY SYSTEMS, INC 615.61050	-	-	-	N
0038	Part	100065863	615.61003	615.61003	1.0	SEAL, RUPTURE DISC, SPEC 70.72000 E10481 OIL STATES RUBBER 615.61003	-	-	-	B
0039	Part	100012958	70.34144	70.34144	1.0	O-RING, 90 DURO, 6 5/8 X 6 1/4 X 3/16	-	-	-	B

Component List:

**Design**

Find#	Type	Part/ Mat'l#	Reference#	Drawing#	Qty	Description	Dim A	Dim B	Dim C	TC
0040	Part	101326710	F03.00340		2.0	568-362, SPEC 599.33001 SPEC, 70.72000	-	-	-	N
						BACKUP, SEAL, 6.358 OD X 6.000 ID X .265W, FILLED TEFLON, SCARF, SPEC	-	-	-	

\*\*\*\*\*END OF DOCUMENT\*\*\*\*\*

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